

STUDIES OF THE BYRON BOG
IN SOUTHWESTERN ONTARIO
XXX. DISTRIBUTION OF ORCHIDS IN THE BOG

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The Byron Bog in London, Ontario has been described by Judd (1957). It shows the zones of vegetation typical of a small black spruce-*Sphagnum* bog (see map, Fig. 1, Judd, 1957, 1966). Zone A is the central portion of the bog and is composed of a floating mat of *Sphagnum* moss almost completely covered by leather-leaf, *Chamaedaphne calyculata* (L.) Moench, and including scattered black spruce and larch trees. Surrounding Zone A is Zone B, a low, wooded area, permanently damp or flooded, and occupied on its inner edge by black spruce and larch and, toward its outer edge, by various deciduous trees and shrubs. The outer zone of the bog is Zone C, an area of comparatively dry, wooded slopes occupied by deciduous trees. In Zone A there is a pond, Redmond's Pond, about two hundred feet long. Further accounts of the vegetation in the zones of the bog are given by Judd (1957, 1966).

The Byron Bog has for many years been of interest to local naturalists, particularly members of the McIlwraith Field-Naturalists' Club, the local natural history club in London, founded in 1890. Before 1961 the bog was in London Township, Middlesex County. In 1961 part of London Township, including the bog, was annexed to the City of London, so the bog is now within the city limits. During its history it has been called by various names. The earlier naturalists called it The Spruce Swamp. It was then successively called Redmond's Swamp (or Redmond's Bog) and Foster's Swamp (or Foster's Bog) after two families of farmers who owned the farm in that part of London Township which included the bog. In more recent years it has been called Byron Bog with reference to the village of Byron, about one-half mile south-west of the bog. This name has been used by staff and students at the University of Western Ontario where research has been conducted on

the bog (Crawford, 1926; Judd, 1957). As will be noted in the following account, the various names used for the bog and mentioned above appear as the localities of collection on labels on herbarium sheets of orchids collected in the bog. In 1966 the bog was acquired by the Upper Thames Valley Conservation Authority as a nature reserve. About half of it was donated to the Authority by the Sifton Construction Company, so the bog is now known officially as the Sifton Bog (Anon., 1967).

Until 1959 the Byron Bog was surrounded for several miles in all directions by farm land and was visited regularly only by interested naturalists. Beginning in 1959, development of land around the bog has proceeded apace, and has been accentuated by annexation of the bog to the City of London in 1961. So to-day the bog is surrounded by subdivisions, schools and a shopping centre and has along its northern limits a major arterial street of London. It is now visited regularly by conducted parties of school children, university students and other groups interested in ecology and nature study. It appears appropriate, then, to record what is known of the distribution of orchids in the bog and to recall observations made during the past on these plants.

An early account of plants collected in the vicinity of London is that of Saunders (1863). In this list he includes thirteen species of orchids, but none of his records indicate that they were found specifically in the Byron Bog. Dearness (1905) published an account of the orchids of Middlesex County and did include references to collections from the bog. Observations on orchids were also made in the bog by members of the Botanical Section of the Entomological Society of Ontario, which existed in London from 1890 to 1904, and are recorded in the minutes of that organization (Anon., 1890-1904). Since 1956 the writer has been engaged in studies of the bog and has published accounts of a few orchids and their periods of blooming (Judd, 1957, 1958). Sheets of specimens of orchids from the bog are in the herbarium of the Department of Botany, University

of Western Ontario (UWO) and of the writer (WWJ). The specimens in the UWO herbarium were collected by local naturalists as far back as 1888, while those in the writer's herbarium were collected starting in 1956 and are referred to by their accession numbers in the following account.

Habenaria lacera (Michx.) Lodd. RAGGED FRINGED ORCHID.

Specimens: Spruce Swamp, *W. E. Saunders*, July 19, 1893 (UWO); Spruce Swamp, *Eli Davis*, July 11, 1934 (UWO); Foster's Bog, *W. G. Colgrove*, July, 1934 (UWO); Byron Bog, *W. W. Judd*, July 21, 1965 (WWJ, 654).

Records: "Mr. Balkwill brought in specimens of — *Habenaria lacera* — from Spruce Swamp" (minutes of meeting of July 5, 1890 (Anon., 1890-1904)); *Habenaria lacera*, Spruce Swamp Bog, *Balkwill* and *McClement*, July 9, 1894 (Plant Records, page 113, (Anon., 1890-1904)).

These five records show that *H. lacera* blooms in the bog during July. On July 21, 1965 when I collected a specimen there were several plants in bloom in the soggiest area of *Sphagnum* moss in Zone A, among the small ponds south of Redmond's Pond. Correll (1950) points out that this species grows in a variety of habitats, including wet sphagnum bogs.

Habenaria psycodes (L.) Spreng. SMALL PURPLE FRINGED ORCHID.

Record: "Mr. Balkwill brought in specimens of — *H. psycodes* — from Spruce Swamp" (minutes of meeting of July 5, 1890 (Anon., 1890-1904)).

No specimens or records are available to indicate in what part of the bog this species was found. It is recorded from a variety of habitats, including *Sphagnum* bogs (Correll, 1950).

Habenaria viridis (L.) R. Br. var. **bracteata** (Muhl. ex Willd.) A. Gray. LONG-BRACTED ORCHID.

Records: "Mr. Balkwill brought in specimens of — *H. virescens* — from Spruce Swamp" (minutes of meeting of July 5, 1890 (Anon., 1890-1904)); *Habenaria virescens*, Spruce Swamp near Hyde Park (Dearness, 1905).

The name *H. virescens*, used in older writings, is shown by Correll (1950) to be synonymous with *H. viridis* var. *bracteata*. No specimens or records are available to indi-

cate in what zone of the bog this plant was found. It is recorded by Correll (1950) from a variety of habitats, including bogs.

Epipactis Helleborine (L.) Crantz. HELLEBORINE.

Specimen: Byron Bog, *W. W. Judd*, August 15, 1966 (wwj, 722).

Several scattered plants were growing in the shade of deciduous trees on the southwest slopes of Zone C on August 15, 1966. Soper and Garay (1954) show that the earliest record of this species in Ontario was in 1890 and that frequent observations, specially after 1931, have been made of its occurrence since then in parts of southern Ontario with calcareous soils. Its occurrence on the slopes of Zone C in the bog is thus not surprising and permits the addition of Middlesex County to the list of sites occupied by this species.

Pogonia ophioglossoides (L.) Ker. ROSE POGONIA.

Specimens: Spruce Swamp, *W. E. Saunders*, July 19, 1893 (UWO); Foster's Bog, *W. G. Colgrove*, July 19, 1934 (UWO); Redmond Swamp, *L. E. James*, July 9, 1950 (UWO); Redmond Bog, *L. E. James*, June 29, 1952 (UWO, 2 sheets); Byron Bog, *W. W. Judd*, June 23, 1956 (wwj, 574).

The specimens noted above all bear open flowers and thus indicate that the flowering period in the bog extends from the end of June into July. In 1956 the blooming period was found to be from June 23 to August 6, with maximum bloom occurring on July 2 (Judd, 1958). This is the commonest orchid in the bog and occurs throughout Zone A. On June 30, 1966 several hundred were in bloom in this zone and on July 22 of the same year most of the plants bore seed pods and only four were in bloom.

Arethusa bulbosa L. ARETHUSA.

Specimens: Spruce Swamp, *W. E. Saunders*, June 12, 1891 (UWO); Byron Bog, *W. W. Judd*, June 13, 1956 (wwj, 570).

Records: *Arethusa bulbosa*, Spruce Swamp, *W. T. Clement*, June 15, 1893 (Plant List, page 96 (Anon., 1890-1904)).

This species grows in the bog in the soggiest parts of the *Sphagnum* mat in Zone A, among the small ponds south of Redmond's Pond. The records indicate that it flowers there

in June. In 1956 its date of maximum bloom was June 18 and of last bloom June 27 (Judd, 1958).

Calopogon pulchellus (Salisb.) R. Br. GRASS-PINK

Specimens: Foster's Bog, *W. G. Colgrove*, July 1934 (UWO); Redmond Bog, *L. E. James*, June 29, 1952 (UWO); Byron Bog, *W. W. Judd*, July 5, 1956 (wwj, 578).

These records indicate that this species blooms at the end of June and into July. In 1956 the period of bloom began on June 30 and extended to August 3, with maximum bloom occurring on July 6 (Judd, 1958). This species grows in company with *P. ophioglossoides* but is less common and grows more closely against humps of *Sphagnum* than does *P. ophioglossoides* which flourishes on the more open areas of moss. On July 2, 1962 fifty plants were counted in bloom. In 1966, seventeen plants were in bloom in Zone A on June 30, thirty-nine were in bloom on July 8 and on July 22 one plant was in bloom and all others bore seed pods.

Spiranthes cernua (L.) L. C. Rich. NODDING LADIES' TRESSES.

Specimen: Byron Bog, *W. W. Judd*, September 21, 1964 (wwj, 647).

This was found growing in *Sphagnum* moss in the shade of a close growth of black spruce in the northeast part of Zone B. Correll (1950) records this species from a variety of habitats, including bogs.

Goodyera pubescens (Willd.) R. Br. DOWNY RATTLESNAKE PLANTAIN.

Specimen: Spruce Swamp, *W. E. Saunders*, September 16, 1888 (UWO).

There is no indication of what zone of the bog this specimen was taken in. Correll (1950) records that this species is most abundant in dry or moist coniferous forests. Thus a likely site for growth of this species would have been the southeast part of Zone B where needles from large white pine trees form a layer on the ground. Saunders (1863) records it as common around London in rich woods and Dearness (1905) reports it as "not rare in coniferous woods" in Middlesex County.

Of the nine orchids recorded from the Byron Bog, six are represented by specimens collected in recent years and three, *Habenaria psycodes*, *H. viridis* var. *bracteata* and *Goodyera pubescens*, have not been reported from the bog for several decades. In view of the intensive studies which have been carried on in the last decade and the consequent likelihood that any orchids present would have been noted, it is altogether likely that these latter three are extinct in the bog. It is evident that those orchids which are present are restricted to particular zones.

Zone A — The most prevalent species here is *Pogonia ophioglossoides*, growing generally on the floating *Sphagnum* mat. *Calopogon pulchellus* grows in company with *P. ophioglossoides* but is much less common. *Habenaria lacera* and *Arethusa bulbosa* are in this zone but are restricted to the soggiest parts of the zone among small ponds south of Redmond's Pond. It is likely that *Habenaria psycodes* and *H. viridis* var. *bracteata* occurred in this zone when they were present in the bog.

Zone B — The one orchid found here is *Spiranthes cernua*, growing in moss beneath crowded black spruce trees. It is likely that *Goodyera pubescens* occurred in this zone for, as pointed out previously, it is commonest in coniferous woods.

Zone C — The only orchid found here is *Epipactis Helleborine*, growing on the comparatively dry, but shaded slopes. It is likely that it is relatively a newcomer to the area.

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